

REMARKS

Applicants respectfully request reconsideration and withdrawal of the outstanding Office Action rejections based on the following remarks.

Rejections under 35 U.S.C. § 103(a)

Claims 15-23 and 26-29 are pending in the application. The Examiner has rejected claims 15-23 and 26-29 under 35 U.S.C. 103(a) as being unpatentable over van Koppenhagen et al. (WO 00/05951) and Martin (EP 0 279 068). van Koppenhagen teaches an aqueous composition comprising pesticides which control weed growth. Martin teaches oil-in-water emulsion compositions comprising pendimethalin. The Examiner argues that van Koppenhagen teaches all of the elements of the present claims except the use of pendimethalin as the herbicide, the anionic oligomers or polymers (claim 20), the boron containing compound (claim 22) and the specific ratio of microencapsulated pendimethalin to non-encapsulated pendimethalin. However, the Examiner argues that Martin teaches that pendimethalin is an herbicide, and that the remaining claim elements would be obvious to one of skill in the art from the teachings of van Koppenhagen. The Examiner argues further that one of skill in the art would be motivated to make a formulation containing a mixture of encapsulated and non-encapsulated active ingredient because that would result in a product with both immediate release and extended release characteristics.

Claims 15 and 28 have been amended to incorporate the features of claim 16 and further define the polymeric wall material. Claim 16 has been cancelled. This amendment to claims 15 and 28 distinguishes the claimed subject matter from van Koppenhagen because the wall material in van Koppenhagen is not analogous to the polymeric wall material in claims 15 and 28. An essential feature of van Koppenhagen's

invention is to provide a microcapsule which is base triggered; that is, the wall material in the microcapsules of van Koppenhagen et al. must become water soluble at $\text{pH} > 8$. van Koppenhagen states (p. 5) that "[i]f on the other hand, the capsules are placed in a basic environment, ... the crosslinking moieties in the capsule wall are cleaved so as to "trigger" or initiate breakdown of the capsule wall." In contrast thereto, the polymeric wall material of claims 15 and 28 requires a water-insoluble polymeric wall material, namely a polyurea or polyurethane (see specification p. 2, beginning at l. 32). These wall materials are water-insoluble and do not undergo breakdown in alkaline pH. It must be noted in this context that the polyureas according to claim 1 and formaldehyde-urea condensates of van Koppenhagen are not analogous and have different chemical properties. Formaldehyde-urea condensates, like those in van Koppenhagen, are prepared by a condensation reaction where water is liberated and the nitrogen atoms of the urea molecules are linked by methylene moieties which thus may be regarded as aminoacetal derivatives of formaldehyde. This reaction is easily reverted by hydroxide ions. In contrast thereto, the polyureas of claims 15 and 28 are prepared by the reaction of di- or polyamines with di- or polyisocyanates, thereby forming a polyurea (see specification p. 3, ll. 1-4). These polymers do not contain aminoacetal-type methylene units and thus are not cleaved under alkaline conditions.

Thus, the claimed microcapsules are not analogous to the microcapsules of van Koppenhagen due to the difference in the wall material which is an essential feature. Consequently, van Koppenhagen teaches away from the claimed invention and a skilled person will not be motivated to replace the wall material of van Koppenhagen by a water-insoluble polymeric wall material such as polyurea or polyurethanes. Therefore, van Koppenhagen cannot render obvious the claimed invention.

Van Koppenhagen is also distinguishable from the subject matter of claims 15 and 28 in that van Koppenhagen teaches the use of a microcapsule formed from an aminoplast shell wall and an encapsulated ingredient, where the aminoplast shell contains an ester-containing crosslinking unit which renders the shell base sensitive, the relevance of which is discussed above, and triggers the release of the encapsulated contents on exposure of the capsules to basic conditions. This is contrary to the

composition of the microcapsule of claims 15 and 28. Therefore, the van Koppenhagen microcapsule is not analogous to the microcapsule of the instant claims and cannot render the claims obvious.

In addition, one must also note that the focus of van Koppenhagen is not on encapsulated herbicides but on encapsulated insecticides. As such, van Koppenhagen's microcapsules have particular utility in the control of insects which have an alkaline environment in their gut (see p. 23, beginning at line 10). This is because the crosslinking agent contained in the shell-material is base-sensitive and thus triggers the release of the encapsulated contents on exposure of the capsules to basic conditions in the insect guts. Therefore, one of skill in the art would not be motivated by van Koppenhagen to combine encapsulated pendimethalin with non-encapsulated pendimethalin because the particular advantages gained by the van Koppenhagen microcapsules have no relevance to a herbicide.

For the reasons enumerated above, the obviousness rejection based on van Koppenhagen and Martin is improper and should be withdrawn.

In view of the foregoing remarks, Applicants respectfully request withdrawal of the outstanding Office Action rejection. Early and favorable action is awaited. The Director is authorized to charge any fees or overpayment to Deposit Account No. 02-2135.

Respectfully submitted,

By /Carolyn L. Greene/
Carolyn L. Greene
Attorney for Applicants
Registration No. 57,784
ROTHWELL, FIGG, ERNST & MANBECK, P.C.
Suite 800, 1425 K Street, N.W.
Washington, D.C. 20005
Telephone: (202)783-6040